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10/565,850

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Shumiao Jiang

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EXAMINER

NGO, TANYA T

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|---------------------------------------|--|
| Office Action Summary | Application No. 10/565,850 | Applicant(s) JIANG, SHUMIAO | |
| | Examiner TANYA NGO | Art Unit 2613 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-32 is/are pending in the application.
4a) Of the above claim(s) 2 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-27 is/are allowed.
- 6) ☒ Claim(s) 28-31 is/are rejected.
- 7) ☒ Claim(s) 32 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 January 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>1/26/2006, 10/19/2007, 11/24/2008, 12/15/2008</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the optical transmission unit used for multiplexing of the encapsulated signals sent by the terminal processing unit and sending the multiplexing signal to the switch unit via and optical fiber (Claim 1) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 10 recites the limitation "the control and management message" in third line of first limitation. There is insufficient antecedent basis for this limitation in the claim.

4. Claim 27 recites the limitation "the gateway unit" in first line of the second limitation. There is insufficient antecedent basis for this limitation in the claim.

5. Claim 32 recites the limitation "the STM framing module" in lines 5 and 6 of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claim 28 is rejected under 35 U.S.C. 102(b) as being anticipated by Steensma et al (herein Steensma) US Patent 4,450,544.

Re claim 28, Steensma discloses a terminal processing unit for use in an optical fiber transmission system, comprising a signal codec module (*1 and 7, Fig. 1*), a terminal frame processing module (*2 and 6, Fig. 2*), and a terminal electric/optical signal processing module (*3 and 5, Fig. 2*), wherein

the signal codec module encodes various signals sent by UE and sends the digital signals to the terminal frame processing module (1, Fig. 1, a Continuously variable slope delta CSVD encoder receives signals from the voice user, performs encoding, and then send the signal to the packetizer 2, fig. 1, Col.3, lines 23-32); at the same time, decodes the digital signals sent by the terminal frame processing module and sends the decoded signals to the UE (2, Fig. 1, a continuously variable slope delta Decoder receives signals from a depacketizer 6, Fig. 1, which is part of the terminal frame processing module, and sends decoded signals to the voice user, Col 3, lines 32-35);

the terminal frame processing module receives the digital signals sent by the signal codec module (packetizer 2, Fig. 1, which is part of the terminal frame processing module, receives signals sent by the continuously variable delta CVSD encoder, Col, 3, lines 23-32, where the signals are digital Col. 6, lines 43-46) which is part of the codec module), encapsulates the signals (the packetzier will form a packet from the user data source Col. 7, lines 59-61, which is equivalent to encapsulation) and sends the encapsulated signals to the terminal electric/optical signal processing module (the signal from the packetizer 2 then sent on to the optical transmitter 3, which is an interface between the terminal electronic and the fiber optic transmission medium, Col. 9, lines 10-12. It is inherent that the optical transmitter is an electric/optical signal processing unit because it is necessary for the signal to propagate in a optical transmission medium to be transformed from an electric signal to an optical signal); meanwhile, de-encapsulates the electric signal sent by the terminal electric/optical signal processing module (the signals at the depacketizer 6 are received from the optical receiver, which is part of the terminal electric/optical

Art Unit: 2613

signal processing module and is depackitized or de-encapsulated, Fig. 1) and then sends the signal to the signal codec module (the signal from the depackitizer is then sent to the CVSD decoder 2, Fig. 1);

the terminal electric/optical signal processing module converts the optical signal sent by an optical transmission unit into an electric signal and sends the electric signal to the terminal frame processing module *(the optical receiver also acts as an interface between the optical transmission medium 4 and the electric devices, 6 and 7, and therefore, it is inherent that the optical receiver transforms the optical signal into an electric signal, Fig. 1);* meanwhile, converts the electric signal sent by the terminal frame processing module into an optical signal and sends the optical signal to the optical transmission unit *(the signal from the packetizer 2 then sent on to the optical transmitter 3, which is an interface between the terminal electronic and the fiber optic transmission medium, Col. 9, lines 10-12. It is inherent that the optical transmitter is an electric/optical signal processing unit because it is necessary for the signal to propagate in an optical transmission medium to be transformed from an electric signal to an optical signal).*

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Steensma as applied to claim 28 above, and further in view of Masuda US PG PUB 2002/0196784 and Goodman et al (herein Goodman) US Patent 6,636,529.

Re claim 29, Steensma discloses all the elements of claim 3, which claim 3 is dependent upon. Furthermore, Steensma discloses:

the terminal electric/optical signal processing module (*3 and 5, Fig. 1*) comprises a electric-to-optical conversion module (*optical transmitter, 3, Fig. 1*) and a optical-to-electric conversion module (*optical receiver, 5, Fig. 1*); wherein

the encoder module receives a signal from UE, encodes the signal (*CVSD encoder, 1, Fig. 1*); the electric-to-optical conversion module converts the frame sent by the packetizer into an optical signal and sends the optical signal to the optical transmission unit (*optical transmitter, 3, Fig. 1*);

the decoder module decodes a de-encapsulated signal sent sends the decoded signal to the UE (*CVSD decoder, 7, Fig. 1*); the optical-to-electric conversion module converts the optical signal sent by the optical transmission unit into an electric signal and sends the electric signal to the packetizer (*optical receiver, 5, Fig. 1*).

Steensma do not appear to explicitly disclose the packetizer include comprises a GFP (generic framing protocol) encapsulating module, a mapping module, a multiplexing module and a STM (synchronous transmission mode) framing module connected successively in order; and an STM (synchronous transmission mode) de-framing module, a de-mapping

Art Unit: 2613

module, a de-multiplexing module and a GFP (generic framing protocol) de-encapsulating module connected successively in order. However, Masuda discloses a LAN interface card comprising of a GFP (generic framing protocol) encapsulating module (63T, Fig. 2), a mapping module (64T, Fig. 2), and a STM (synchronous transmission mode) framing module (65T, Fig. 2) connected successively in order; and an STM (synchronous transmission mode) de-framing module (65R, Fig. 2), a de-mapping module (64R, Fig. 2), and a GFP (generic framing protocol) de-encapsulating module (63R, Fig. 2) connected successively in order. Steensma and Masuda are analogous art because they are from the same field of endeavor, voice/packet communications. At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Steensma before him or her, to modify the packetizer of Steensma to include the components of Masuda because it makes use of virtual concatenation, which significantly improves the efficiency of data transport and allows finer granularity for provisioning of bandwidth services (*paragraph [0004]*).

Steensma and Masuda do not appear to explicitly disclose a multiplexer and de-multiplexer prior to the STM path. However, Goodman discloses a multiplexer/de-multiplexer 310 between a SDH framing unit 300 and the virtual concatenation units 320, Fig. 3. Masuda and Goodman are analogous art because they are from the same field of endeavor, packet communication in a synchronous digital network. At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Masuda and Goodman before him or her, to modify the LAN card of Masuda to include

the multiplexer/de-multiplexer of Goodman because it enables the Masuda unit to a plurality of signals from the user over one medium, allowing for a more efficient use of the resources.

10. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Steensma, Masuda, and Goodman as applied to claim 29 above, and further in view of Holender US Patent 5,727,051.

Re claim 30, Steensma, Masuda, and Goodman disclose all the elements of claim 29, which claim 30 is dependent upon. Steensma, Masuda, and Goodman do not appear to explicitly disclose an encoder, encapsulator, a mapper for an audio, video, and data signal, as well as a decoder, de-encapsulator, and de-mapper. However, Holender discloses that the customers want the ability to transmit not just voice signals, but also data, audio, video, and multimedia signals in both real time as well as through packet switching networks (*Col. 2, lines 26-31*). Steensma, Masuda and Goodman are analogous art because they are from the same field of endeavor, packet communication networks. At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Steensma, Masuda and Holeander before him or her, to modify the terminal unit of Steensma and Masuda to the path taken by the voice signal to be replicated for data, audio, and video signals of Holeander because it allows vendors to supply their clients with more services within the same packet switching network.

11. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Steensma as applied to claim 28 above, and further in view of McDysan et al (herein McDysan) US Patent 5,244,108.

Re claim 31, Steensma discloses all the elements of claim 28, which claim 31 is dependent upon. Steensma does not appear to explicitly disclose the terminal processing unit further comprises a man-machine interface module, a control and management information processing module, and a terminal overhead processing module. However, McDysan discloses

the man-machine interface module (*user data source receiver 401, Fig. 11*) forwards the operation command sent by the UE to the control and management information processing module; meanwhile, receives and forwards the control and management message from the management information processing module to the UE (*associated with the data source-receiver 401 is the user call processor 402 which is operative to generate and receive particular signals required for call control, Col. 13, lines 65-68*);

the control and management information processing module (*user call processor 402, Fig. 11*), after receiving the operation command sent by the man-machine interface module, generates a corresponding control and management message and sends the message to the terminal overhead processing module (*the call control signals that are to be carried in the signaling overhead are produced as a response by the user call processor 402, Col 14, lines 26-28, which is associated with the user interface and are sent to the outgoing signal processor 411, Fig. 11*); meanwhile, receives the control and management message sent by the terminal overhead processing module, interprets the message and then sends the interpreted message to the man-machine interface module (*the call control message that arrives at the signal processor is sent to the user call processor 402 as a command response, for handling received message, Col. 15, lines 1-7*);

the terminal overhead processing module (*411 and 413, Fig. 11*) receives the control and management message from the control and management information processing module, generates a corresponding overhead and sends the overhead to the terminal frame processing module (*the outgoing signal processor 411 reformats the call control signal in accordance with certain standards, which is eventually overwrites or merges with the signaling overhead, Col. 14, lines 14, lines 26-45*); at the same time, extracts the control and management message and then sends the message to the management information processing module (*the incoming signal processor is entirely analogous and functionally equivalent to the incoming and outgoing signals processors, respectively, Col. 14, lines 20-25, and will therefore perform the inverse of the extraction of the control signal*).

Steensma and McDysan are analogous art because they are from the same field of endeavor, telecommunications. At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Steensma and McDysan before him or her, to modify the terminal unit of Steensma to include the controlling units of McDysan because the unit provides a simple method for establishing end-to-end connections over the digital multiplex hierarchy, including a SONET optical network.

Allowable Subject Matter

12. Claims 1 and 3-27 are allowed.

13. Claim 32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TANYA NGO whose telephone number is (571) 270-7488. The examiner can normally be reached on M - F from 9 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye can be reached on (571) 272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 10/565,850

Page 12

Art Unit: 2613

/Ngo/

Oct. 26, 2009

/Kenneth N Vanderpuye/

Supervisory Patent Examiner, Art Unit 2613